

Amendments to the Claims

Claim 1 (currently amended): A method of cleaving a recombinantly expressed protein bound to an intein-chitin binding domain (CBD) and ligating said cleaved recombinant protein to a peptide containing an N-terminal cysteine having an unoxidized sulfhydryl side chain said method comprising contacting said ~~bound recombinant~~ recombinantly expressed protein bound to said intein-CBD with said peptide in a reaction solution containing a conjugated thiol, thereby effecting, in a one-pot reaction, cleavage of said ~~recombinant~~ recombinantly expressed protein from said intein-CBD and production of a C-terminal thioester of the ~~recombinant~~ recombinantly expressed protein which spontaneously undergoes intramolecular rearrangement to form an amide bond linking the C-terminus of said protein to the N-terminus of said peptide.

Claim 2 (original): The method according to claim 1, wherein the conjugated thiol is selected from the group consisting of thiophenol, 2-nitrothiophenol, 2-thiobenzoic acid, 2-thiopyridine, 4-thio-2-pyridine carboxylic acid and 4-thio-2-nitropyridine.

Claim 3 (original): The method according to claim 1, wherein the conjugated thiol is thiophenol.

Claim 4 (original): The method according to claim 1, wherein reaction is conducted at about pH 7.

Claim 5 (original): The method according to claim 3, wherein reaction is conducted at about pH 7.

Claim 6 (original): The method according to claim 1, wherein the reaction is conducted in a buffered solution.

Claim 7 (original): The method according to claim 3, wherein the reaction is conducted in a buffered solution.

Claim 8 (original): The method according to claim 1, wherein the recombinantly expressed protein is generated in a prokaryotic host.

Claim 9 (original): The method according to claim 1, wherein the recombinantly expressed protein is generated in a eukaryotic host.

Claim 10 (original): The method according to claim 1, wherein the recombinantly expressed protein is expressed by PCYB expression plasmids.

Claim 11 (original): The method according to claim 3, wherein the recombinantly expressed protein is expressed by pCYB expression plasmids.

Claim 12 (new): The method according to claim 1, wherein said reaction solution further contains a alkyl thiol which is effective to promote the production of said C-terminal thioester of the recombinantly expressed protein.